CLAIMS

What is claimed is:

1. An apparatus comprising:

a strap including a substrate with an embedded integrated circuit, the integrated circuit having a conductive pad, and a conductive medium attached to the conductive pad of the integrated circuit; and

a large-scale component attached to the conductive medium, the large-scale component electrically coupled to the integrated circuit.

2. The apparatus of claim 1, wherein the large-scale component is a substrate including therein an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

3. The apparatus of claim 1, wherein the conductive medium is paste.

4. The apparatus of claim 1, wherein the conductive medium is electrically conductive tape.

5. The apparatus of claim 2, wherein the conductive medium is paste and wherein the integrated circuit is a Nanoblock IC containing circuitry suitable for radio frequency applications.

6. The apparatus of claim 5, wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

7. The apparatus of claim 1, wherein the integrated circuit is a circuit suitable for use with radio frequency applications.

8. The apparatus of claim 7, wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

9. The apparatus of claim 1, wherein the integrated circuit includes a circuit suitable to control an electronic display.

10. The apparatus of claim 9, wherein the large-scale component is a substrate including thereon a display electrode, the display electrode electrically coupled to the integrated circuit directly through the conductive medium.

11. The apparatus of claim 9, wherein the large-scale component is a substrate including thereon a display electrode connected to a conductor, the conductor connected to the conductive medium, thereby electrically coupling the display electrode to the integrated circuit.

12. The apparatus of claim 11, wherein the display electrode is printed on the substrate.

13. The apparatus of claim 1, wherein the large-scale component is a substrate including therein a sensor, the sensor electrically coupled to the integrated circuit directly through the conductive medium.

14. The apparatus of claim 1, wherein the large-scale component is a power source, the power source electrically coupled to the integrated circuit directly through the conductive medium.

15. The apparatus of claim 14, wherein the power source is a substrate including a battery, the battery electrically coupled to the integrated circuit directly through the conductive medium.

16. The apparatus of claim 15, wherein the battery is a button cell embedded within the large-scale component substrate.

17. The apparatus of claim 15, wherein the battery is a thick film cell printed on the large-scale component substrate.

18. The apparatus of claim 1, wherein the large-scale component is a substrate having thereon a logic device, the logic device electrically coupled to the integrated circuit directly through the conductive medium.

19. The apparatus of claim 1, wherein the conductive medium is metal particles suspended in a carrier.

20. The apparatus of claim 1, wherein the conductive medium is a conductive polymer.

21. The apparatus of claim 1, wherein the conductive medium is a carbon-based conductor.

22. The apparatus of claim 1, wherein the substrate is of a flexible material.

23. A method comprising:

attaching a conductive medium to a substrate having embedded therein an integrated circuit such that the conductive medium is connected electrically to the integrated circuit; and

attaching a large-scale component to the conductive medium such that the large-scale component is electrically connected to the conductive medium.

24. The method of claim 23, further comprising:

embedding the integrated circuit in the substrate.

25. The method of claim 23, wherein attaching the conductive medium is accomplished by printing the conductive medium on the substrate and curing the conductive medium.

26. The method of claim 23 wherein attaching the conductive medium is accomplished by coating the conductive medium in fluidic form on the substrate and curing the conductive medium.

27. The method of claim 25, wherein:

printing comprises screen printing.

28. The method of claim 25, wherein:

printing comprises stencil printing.

29. The method of claim 25, wherein:

printing comprises printing using an ink jet printer.

30. The method of claim 26, wherein:

coating the conductive medium comprises extruding the conductive medium.

31. The method of claim 26, wherein:

coating the conductive medium comprises curtain coating.

32. The method of claim 23, wherein attaching the conductive medium is accomplished by laminating the conductive medium to the substrate.

33. The method of claim 23, wherein attaching the conductive medium is accomplished by hot pressing the conductive medium to the substrate.

34. The method of claim 23, wherein:

the integrated circuit is a Nanoblock IC.

35. The method of claim 23, wherein:

the integrated circuit is suitable for radio frequency applications.

36. The method of claim 23, wherein:

the large scale component is a substrate having thereon an antenna, the antenna electrically connected to the conductive medium.

37. An apparatus comprising:

an integrated circuit embedded within a substrate;

a thin-film dielectric layer formed over a portion of the integrated circuit and a portion of the substrate;

a conductive medium formed over a portion of the thin-film dielectric layer, the conductive medium having direct electrical connection with the integrated circuit.

38. The apparatus of claim 37, wherein the substrate is of a flexible material.

39. The apparatus of claim 37, wherein the conductive medium is a solder.

40. The apparatus of claim 37, further comprising:

a large-scale component connected to the conductive medium, the large-scale component electrically coupled to the integrated circuit.

41. The apparatus of claim 40, wherein the conductive medium is conductive paste.

42. The apparatus of claim 40, wherein the conductive medium is silver ink.

43. The apparatus of claim 40, wherein the conductive medium is tape.

44. The apparatus of claim 40, wherein the conductive medium is metal particles suspended in a carrier.

45. The apparatus of claim 40, wherein the conductive medium is a conductive polymer.

46. The apparatus of claim 40, wherein the conductive medium is solder.

47. The apparatus of claim 40, wherein the conductive medium is a carbon-based conductor.

48. The apparatus of claim 40 wherein the large-scale component is an antenna.

49. The apparatus of claim 40 wherein the large-scale component is a power source.

50. The apparatus of claim 49 wherein the large-scale component is a battery.

51. The apparatus of claim 49 wherein the large-scale component is a thick film cell printed on a large-scale component substrate.

52. The apparatus of claim 49 wherein the large-scale component is a button cell.

53. The apparatus of claim 40 wherein the large-scale component is a sensor.

54. The apparatus of claim 40 wherein the large-scale component is a logic device.

55. The apparatus of claim 40 wherein the large-scale component is a display electrode.

56. The apparatus of claim 37, wherein the integrated circuit is a Nanoblock IC.

57. The apparatus of claim 37, wherein the integrated circuit is a display driver.

58. The apparatus of claim 37, wherein the integrated circuit is a radio-frequency identification circuit.

59. The apparatus of claim 37 wherein the integrated circuit is a circuit suitable for use with radio frequency applications.

60. The apparatus of claim 40 wherein the large-scale component is a substrate having thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

61. A method comprising:

forming a thin-film insulator on a portion of an integrated circuit and a portion of a substrate, the integrated circuit embedded within the substrate; and

attaching a conductive medium to the thin-film insulator and to the integrated circuit, the conductive medium electrically connected to the integrated circuit.

62. The method of claim 61, further comprising:

attaching a large-scale component to the conductive medium such that the large-scale component is coupled electrically to the integrated circuit.

63. The method of claim 61, further comprising:

embedding the integrated circuit in the substrate.

64. The method of claim 61 further comprising:

adhering tape to the conductive medium on the substrate ; and

adhering the tape to a large-scale component, thereby attaching the large-scale component to conductive medium, and thereby electrically coupling the large-scale component to the integrated circuit.

65. The method of claim 61 wherein:

forming the thin-film insulator includes:

depositing the thin-film insulator on the integrated circuit and on the substrate,

and patterning the thin-film insulator through a photolithographic process..

66. The method of claim 61, wherein:

attaching the conductive medium includes printing conductive ink.

67. The method of claim 61, wherein:

attaching the conductive medium includes screen printing conductive paste and curing the conductive paste.

68. The method of claim 65, wherein:

attaching the conductive medium includes screen printing solder paste and reflowing the solder.

69. The method of claim 61, wherein:

attaching the conductive medium includes applying conductive tape.

70. The method of claim 69, wherein:

conductive tape is laminated.

71. The method of claim 69, wherein:

conductive tape is hot pressed.

72. The method of claim 61, wherein attaching the conductive medium includes extrusion coating.

73. The method of claim 61, wherein attaching the conductive medium includes curtain coating.

74. The method of claim 61, wherein:

attaching the conductive medium includes applying a carbon-based conductor.

75. The method of claim 61, wherein:

attaching the conductive medium includes applying a conductive polymer.

76. The method of claim 61, wherein:

attaching the conductive medium includes applying a carrier, the carrier including metal particles suspended therein.

77. The method of claim 61, wherein:

attaching the conductive medium includes ink jet printing.

78. The method of claim 62, wherein:

the large-scale component is an antenna.

79. The method of claim 62 wherein:

the large-scale component is a power supply.

80. The method of claim 62 wherein:

the large-scale component is a display electrode.

81. The method of claim 62, wherein:

the large-scale component is a sensor.

82. The method of claim 62, wherein:

the large-scale component is a logic device.

83. The method of claim 62, wherein:

the integrated circuit is a suitable for radio frequency applications .

84. The method of claim 62, wherein:

the integrated circuit is a display driver.

85. The method of claim 62, wherein:

the integrated circuit is a Nanoblock IC.

86. The method of claim 61, further comprising:

fabricating the integrated circuit.

87. An apparatus comprising:

a substrate having embedded therein an integrated circuit, the integrated circuit having a conductive pad; and

a conductive medium attached to the conductive pad of the integrated circuit.

88. The apparatus of claim 87, wherein the substrate is of a flexible material.

89. The apparatus of claim 87, further comprising:

a large-scale component attached to the conductive medium, the large-scale component electrically coupled to the integrated circuit.

90. The apparatus of claim 87, wherein

the substrate has thereon a logic device, the logic device electrically coupled to the integrated circuit directly through the conductive medium.

91. The apparatus of claim 90, wherein the conductive medium is a solder

92. The apparatus of claim 89, wherein the logic device is a microprocessor.

93. The apparatus of claim 89, wherein the logic device is a memory integrated circuit.

94. The apparatus of claim 89, wherein
the substrate has thereon a power source, the logic device electrically coupled to the power source directly through the conductive medium.

95. The apparatus of claim 94, wherein
the power source is a thick film cell.

96. The apparatus of claim 94, wherein
the power source is a button cell.

97. The apparatus of claim 87, wherein
the substrate has printed thereon an antenna, the antenna electrically coupled to the integrated circuit directly through the conductive medium.

98. The apparatus of claim 87, wherein

the conductive medium is formed as an antenna on the substrate.